

# The Impact of Microfinance on Business Revenue in the Informal Sector of Ghana: Case Study of Four Selected Districts

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## Abstract

The study examined the impact of microfinance on business revenue in the informal sector of Ghana. A sample of 400 respondents out of a target population of 211,085 participated from four districts: Upper Manya Krobo, Shai Osudoko, Mpohor, and Jasikan. A total valid response rate of 99.5% ( $n=398$ ) out of the sample was obtained to make generalizations. The study used structured questionnaires with the likert scale rating to acquire primary data from respondents such as Traders representing 54% of the sample, Artisans representing 30.7%, Service providers' representing 6.8% and others in the manufacturing and production representing 8.5%. This was undertaken through a combination of purposive sampling and multi-stage sampling techniques using stratified and simple random sampling. The data was analyzed using percentages, mode, weighted average mean, Pearson correlation and regression analysis. The results showed that employing microfinance activity such as micro savings, micro loan, micro training and microinsurance, there is a statistically significant relationship between microfinance and business revenue; micro savings ( $r=0.612$ ,  $P\text{-value } 0.000$ ), micro loans ( $r=0.358$ ,  $P\text{-value } 0.000$ ), micro training ( $r=0.486$ ,  $P\text{-value } 0.000$ ) and micro insurance ( $r=0.694$ ,  $P\text{-value } 0.000$ ). Furthermore, the multiple regression analysis found a statistically significant impact of microfinance on business revenue in the informal sector of Ghana ( $p\text{-value}=0.000<0.05$ ) at 5% level of significance. Therefore, we reject the null hypothesis and accept the alternative hypothesis that microfinance have a statistically significant impact on business revenue in the informal sector of Ghana.

**Keywords:** microfinance, informal sector, Ghana

## 1. Introduction

The concept of microfinance has existed in different parts of the world in Sri Lanka, Indonesia, Bolivia, and Cameroon for over centuries (Frimpong & Kalbersonn, 2014). The tradition of saving and lending in Ghana can also be traced back to the nineteenth century. The first credit union was established in Africa in 1955 in the Northern sector of Ghana by Catholic missionaries from Canada (Asiama & Osei, 2007). Susu, which is among the first microfinance schemes in Ghana, is believed to have started from Nigeria and spread to Ghana in 1924 (Appiah et al., 2011).

Microfinance is a viable mechanism for addressing the financial needs of poor people who are not able to access financial services essential for development (Frimpong & Kalbersonn, 2014). Microfinance is hinged on the principle of offering small loans to underprivileged borrowers with no credit history, unstable employment, and lack collateral security to secure loan from banks (Yusuf et al., 2009).

Microfinance also entails providing financial assistance with the target group being low income earners and managers of small funds. Furthermore, microfinance has the potential of supporting individuals and small scale entrepreneurs, empowering women as well as reducing poverty and uplifting entire communities through microcredit (Ilavbarhe & Eronmwon, 2015). Therefore, microfinance is associated with assisting poor people to be empowered financially. Microfinance has emerged as a significant tool for addressing the problem of finance in the informal sector as it requires less investment yet serves a greater percentage of poor people that formal banking institutions consider unprofitable (Nargiza, 2013).

The informal sector in Ghana employs about 86.1% of the Ghanaian labour force (Clara & Ampratwum, 2011). Ghana's informal sector comprises of owners of small-scale enterprises specifically self-employed persons like artisans, farmers, traders, and craft workers (Clara, 2011). The informal sector is viewed as a very significant sector to the economic development of Ghana.

Despite the significance of the informal sector, which employs about 86.1% of the Ghanaian labour force, the informal sector constitutes 64% of people living in poverty (Clara & Ampratwum, 2011; GSS, 2010). Poverty in the informal sector is attributed to lack of financial assistance or credit facilities beyond what people working within the sector receive from informal money lenders, friends and relatives (Nyamekye et al., 2009). The purpose of this study is to understand the relationship between microfinance and business revenue based on primary data from the perception of Ghana's informal sector workers.

The study is relevant to improving the operations of 468 licensed microfinance institutions, 11 licensed FNGOs, the Government of Ghana, development agencies like the World Bank, and International Monetary Fund to adopt the necessary financing measures needed to ensure desired revenue growth in the business of microfinance beneficiaries in Ghana's informal sector.

## Research Questions and Hypothesis

The study answers the following question:

What is the relationship between microfinance and business revenue in Ghana's informal sector?

H<sub>10</sub>: There is no statistically significant relationship between microfinance and business revenue in Ghana's informal sector.

H<sub>1a</sub>: There is a statistically significant relationship between microfinance and business revenue.

The rest of the study is organized as follows: section 2 is the review of literature on concept of microfinance, microfinance in the informal sector and business revenue. Section 3 is the methodology of this research work, followed by the analysis and findings in section 4, and then section 5 captures the conclusion.

## 2. Literature Review

The fundamental theoretical assumption is based on previous studies concerning microfinance and business revenue (Bernheim, 2008; Omoro & Omwange, 2013). The welfare theory was used as the fundamental theory for this study on the impact of microfinance on business revenue in Ghana's informal sector. Welfare theory is among the theories considered for the study. This theory had been applied by many scholars to evaluate the impact of microfinance on the welfare of the poor (Ashamu, 2014; Bernheim, 2008; Kaka, & Abidin, 2014; Nghiem, Coelli, & Rao, 2012). The major aim of the welfare theory is to measure welfare or well-being on an individual basis. The welfare theory aims at assessing the allocation of resources and its impact on the well-being of indigenes, taking efficiency and equity as facilitators (Deardorff, 2014). The welfare theory was founded on two assumptions; the first being that competitive market produces efficient results. Competitive market refers to a free market where the consumer is given options or substitutes to choose (Hindriks & Myles, 2013). This brings about competition as it causes producers to design products which attract the desire of consumers. The informal sector in Ghana is faced with issues such as unfavorable policies which include government trying to discourage the consumption of unregistered products, as well as situational and political conditions like uncertain work relationships, and bad working conditions due to the absence of legislative protection (Clara & Ampratwum, 2011). As a result, operators in the informal sector are now obliged to produce quality goods to be able to compete in the local market with products from the formal sector.

The informal sector is also faced with the challenge of foreign products penetrating the local markets (Osarenkhoe, 2009). These foreign products are also of very high quality and low priced. The major challenge posed by both internal and external conditions is lack of credit access to the informal sector labors. This is due to the fact that the sector is considered to be highly risky by the banks, and this can best be averted when there is access to low interest loans by the small businesses in the informal sector. Accessing credits through microfinance help individual businesses in the informal sector to invest in key areas to increase productivity and enhance development. This has a positive trickling down effect on the welfare of the individual business owners in the sector (Bichanga & Njage, 2014). Additionally, human capital in the informal sector plays a dominant role in measuring the well-being of an economy (Anthony, 2012). The ability to come-up with business ideas and to carry out such ideas is a good indicator than consideration of fertile lands, minerals in the soil, and level of rainfall.

The second assumption of welfare theory stipulates further restrictions as a measure to attain competitive market equilibrium (Hindriks & Myles, 2013). This simply relates to controlling import and export activities to protect and also to enhance the local market which is dominated by the informal sector. This comes with regulatory policies to restrict multinational corporations from over flooding the local market with their products. Measures such as putting embargo on products that are not locally produced and relying more on locally produced goods to meet the demands of consumers, (Anthony, 2012; Bernheim, 2008; Jean & Gareth, 2013). This could be followed by providing financial support for small businesses through microfinance schemes to improve their production capacity. Strategic investments through access to credits from microfinance institutions can be used to raise the standards of local goods to meet that of the international products (Amartya, 2001; Hal, 2006). This will further enhance the exportation of locally made products from the informal sector into the international market.

### **Concept of Microfinance**

Poor people all over the world, are left out from accessing financial services from formal financial systems, especially in less developed countries like Ghana, Pakistan, Ethiopia and Nigeria (Idris & Agbim, 2015; Yusuf et al., 2009). Owing to unavailability of finance to poor people from formal financial service institutions like commercial banks, the poor have found many means of saving through community-based financial agreement to meet their monetary and business needs (Ojua et al., 2014). The practice of microfinance originated in 1974 and had since gained a significant thrust across the world.

The food crises that occurred in 1974 in Bangladesh brought about the coining of microfinance by Muhammad Yunus to cater for the poor (Christen & Drake, 2002). Microfinance began in Jobra, a small town in Bangladesh when Muhammad Yunus used his personal income to offer micro credit to poor inhabitants particularly women, with low interest rate. As a result, Muhammad Yunus is known to be the main pacesetter of microfinance initiative in the world. The initiative of Muhammad Yunus led to the formation of Grameen Bank

project in 1976, which was later changed to a banking institution in 1983 (Yunus, 2007).

However, other microfinance institutions like Bangladesh Rehabilitation Assistance Committee (BRAC) was established in the 1976 (Smillie, 2009). BRAC was a non-governmental organization that provided microcredit to the poor in Bangladesh without collateral. BRAC initiative was an economic development programme aimed at promoting economic development through solidarity lending and saving schemes by village organizations. The BRAC initiative targeted mainly poor women in rural villages in Bangladesh as well as poor farmers and poor people not into employment, to enable them to generate income through microcredit, with the aim of enhancing their standard of living (Smillie, 2009). The BRAC initiative brought about the practice where the poor form small groups for lending purposes and borrow collectively as solidarity groups. This practice of solidarity lending assisted members of the groups to inspire each other to pay back loans. Grameen Bank and BRAC initiative triggered a major milestone in microfinance in the 1980s, as these institutions started providing financial services like credit and savings on a large scale (Christen, 2001; Robinson, 2001). For instance, the credit scheme initiated by the Grameen bank was providing micro credit of 100 US dollars to poor rural women in groups, even though those women have been abandoned by the banks (Yunus, 2010). The microfinance initiative by the Grameen Bank was sustainable in promoting economic development, even though the initiative was not subsidized by the Bangladesh government (Robinson, 2001).

Asiamah and Osei (2007) discovered that the concept of microfinance began as Susu collection in Ghana and is believed to have originated from Nigeria. The tradition of microfinance practices has been common in Ghana with people taking small loans and saving among groups and individuals to help one another. Through these means Susu has become the most prominent microfinance activity in the informal sector of Ghana, most especially the rural areas. Susu has also been a major source of business finance for the urban poor entrepreneurs like artisans and petty traders, through daily or weekly fixed amount of contribution. Artisans who benefit from Susu include hairdressers, tailors, carpenters, fitting mechanics.

#### ***The Informal Sector***

Klarita (2004) conducted a survey on the informal sector in both developed and less developed countries and discovered that the term informal sector was coined by an anthropologist Keith Hart in 1971. Keith Hart, a social anthropologist coined the term informal sector to denote the section of labor force in the urban areas who does not operate in the formal sector. This was deduced from the context of Developing countries. Hart explained that the informal sector refers to sorts of small business and self-employed labor force that works outside the formal sector. Informal sector denotes working outside the formal wage sector as a way of earning supplementary revenue or as a substitute to the formal sector. Albeit the concept informal sector was originally viewed as self-employed labor force by Hart, the concept includes activities that was formerly disregarded in national economic accounts and economic development.

Tshuma and Jari (2013) examined the informal sector of South Africa as a source of household income by focusing on Alice town sited at the Eastern Cape Province. The study also classified the informal sector into self-employed operational activities, with lower organization as well as technology to generate employment and incomes. The informal sector is heterogeneous and takes the form of services like kiosks or general stores, barber shops, open-air garages, sale of second hand clothing and household appliances. The sector also takes the form of manufacturing of metal and wood products.

Clara and Ampratwum, (2011) conducted a critical review of the informal sector of Ghana. It was observed that the formal sector of Ghana has failed to generate the required employment and for that matter the informal sector has come to fill in the gap. The government of Ghana has consistently maintained the policy of not employing new additional labour force into the public sector. Additionally, firms in the private sector are facing the intense competition with foreign firms, which is causing the private firms to collapse. Also, Ghana lack social protection mechanism like unemployment benefit as in countries like the USA and Canada. This makes the informal sector business activities the only means of survival for the poor populace in the urban and rural areas of Ghana. The informal sector of Ghana consists of owners of small enterprises like producers, suppliers of raw materials, retailers and wholesalers as well as self-employed individuals such as traders, farmers, food processors, craft men and artisans.

Nevertheless, Onwe (2013) recommended the need for future scholastic study on the gaps of existing economic use of Nigeria informal sector and the informal sector of other African countries like Ghana, Guinea Bissau, South Africa and Kenya. Microfinance is the sole source of credit to the poor and the unbanked populace especially in rural areas (Ahmeti, 2014; Bugg-Levine & Emerson, 2011; Jegede & Kehinde, 2011; Kalam, 2016; Mazharul & John, 2012; Nasir, 2013). Likewise, Idris and Agbim, (2015) acknowledged an increased inclusion of women entrepreneurs at major markets in Nasarawa State of Nigeria in accessing microfinance products through associations, rotating savings groups, and NGOs.

#### ***Impact of Microfinance***

Microfinance is a major solution to social problems in India and developing countries like Ghana, Benin, and Nigeria. Many corpus funds and social programs have been instigated over the years to elevate the poor from

poverty but have failed to reduce poverty. Microfinance has come to generate jobs and income to unprivileged households in the society. Boateng et al. (2015) examined the role of microfinance in alleviating poverty in Ghana, by focusing on customer beneficiaries of microfinance loans of Sinapi Aba Savings and Loans Company Limited and Opportunity International Savings and Loans Limited. The study discovered that there is significant positive relationship between microfinance and socio-economic variables like household growth, individual income, access to education, participation in social events and housing. The study proposed that beneficiaries of microfinance loans must be trained to ensure efficient utilization of credit and creation of enabling environment for small businesses to thrive.

Nana (2008) also discovered an emergent competition in the Ghanaian financial sector and indicated the need to innovate the financial products been offered by the microfinance institutions. The study highlighted on the fact that microfinance plays a central role in the financial industry of Ghana as they offer beneficial financial services to the urban, semi-urban, and rural poor in the informal sector. Banks are not interested in engaging into the practices of small lending operation due to the specialized methodology required. This specialized methodology entails the concept of group solidarity, inventory credit schemes, educational credit, and mutual guarantee schemes which is best performed by microfinance institutions in Ghana. Examples of such specialized methodology in the microfinance sector of Ghana comprises of educational microloan initiated by financial NGO called Freedom from Hunger Ghana, and food inventory credit product pioneered by Technoserve International. Other microfinance institutions like Sinapi Abi Trust has also introduced microcredit and spiritual change programme for the poor, and Kraham Support Foundation has also initiated the TECH lending product which enables the foundation to offer credit to the poor with the main purpose of assisting training, education and health needs of the beneficiaries. However, it is advisable that microfinance institutions categorized their lending products into enterprise credit and emergency or consumption credit.

Murray (2005) also observed that microfinance is a tool for triggering or supporting economic and social development through entrepreneurship activities. The study showed that microfinance can have numerous spin-off benefits, which comprises of the opportunity to be an element of poverty alleviation strategy, hence contributing to the development goals of providing low-income rural women and men the chance to improve income generating activities. Clients who patronize microfinance services are different in terms of income, age, size and ethnicity. It is established that microfinance has positive effect on the income of women. Ediom-Ubong and Iboro (2010) undertook a study on the impact of microfinance scheme on rural poverty, by focusing on the micro-credit scheme of a non-governmental organization, known as Organization for Youth Development (OFYD). The findings revealed that microfinance schemes through microcredit is associated with many benefits like increasing income generation. Studies also shows a positive correlation between micro-lending and empowerment through improvement of financial capital and increased business income (Asmamaw, 2014; Nkpoyen & Bassey, 2012). Gomez and Santor (2001) also employed the case study approach to provide practical evidence on the significance of social collateral in microcredit. A case study of 52 individual borrowers and 612 group borrowers were used for the study. The findings showed that group lending and the existence of neighbors have a positive correlation with earnings by self-employment. The borrowers who benefited by obtaining higher earnings, will then find it easy to service microloans.

### **3. Methodology of the Study**

This study adopted the survey method to obtain reliable information needed to address the purpose of the research and also offered a chance to ask direct questions from participants (Shaughnessy, et al 2011). Furthermore, the survey method was considered to be more suitable for this study, which ensured better assessment of responses across the various subgroups in the target population. The survey helped to establish the trends in the responses from the questions, hence ensured the purpose of the research was accurately achieved. The major problem of survey is the inability to achieve higher response rate and to obtain more reliable data (Fowler, 2009). However, this study was properly planned, and questions were properly presented to minimize poor response rate and also enhance the reliability of data. The survey method was employed because the data was collated from diverse people working in Ghana's informal sector (Cooper & Schindler, 2002). This study employed a quantitative design which according to Cohen, Manion, and Morrison (2000) throw more light on fundamental relationships that exist between variables and aid in testing hypotheses. Furthermore, the quantitative design allowed the researcher to test and validate already constructed theories on microfinance and business revenue.

#### ***Population and Sample size***

The target population comprises 211,085 informal sector labour in Upper Manya Krobo district, 44,927 in Shai Osudoku district, 36,399 in Mpohor district and, 60,695 in Jasikan district (GSS, 2014). Upper Manya Krobo district is located in the Eastern Region with population size of 72,092 (95.8% in the informal sector), Shai Osudoku district is located in the Greater Accra region with a population of 55,741 (80.6% in the informal sector), Mpohor district is located in the Western Region with a population size of 42,923 (84.8% in the informal sector),



and Jasikan district is located in the Volta Region with a population size of 66,625 (91.1% in the informal sector) (GSS, 2010; 2014).

The total sample size of 400 was chosen from 211,085 target population of the informal sector labour force in Upper Manya Krobo district, Shai Osudoku district, Mpohor district and Jasikan district, based on a precision value of  $\pm 5\%$ . The 400 respondents comprised of petty traders, farmers and small business owners, in four (4) different regions of Ghana, namely, Eastern, Greater Accra, Western and Volta Regions. These regions were targeted because their labour force constitutes 44.4% of Ghana's informal sector (GSS, 2014). The sample size was obtained from statistical formula propounded by Taro (1970) for deriving sample size in research  $n = \frac{N}{1 + N(e)^2}$ , where  $n$  is the sample size,  $N$  is the target population, and  $e$  is the level of precision or error margin (Glenn, 2013; Sing & Masuku, 2014).

#### **Sampling Technique**

The respondents were grouped by using stratified sampling technique based on their residing region. The stratified sampling technique is a probability sampling strategy which focuses on specific strata in a population (Creswell, 2009). By the stratified sampling technique, every unit from a specific population stratum had an equal chance of being selected to generate a sample.

The objective of the stratified sampling technique was to minimize the possibility of human bias in selecting participants involved in the study. The stratified sampling technique offered the researcher an accurately representative sample from the population under study. The stratified sampling technique enabled the researcher to make a statistical conclusion from the findings due to the fact that each participant included in the probabilistic procedure. Also, purposive and simple random sampling methods were used for the study. Purposive sampling strategy is a type of sampling strategy in which the respondents are selected based on the researcher's judgement (Creswell, 2007). The purposive sampling strategy was employed under the stratified sampling strategy to focus on specific features of the target population of interest and hence assisted the researcher to accurately address the research questions. On the other hand, simple random sampling is a form of probability sampling where respondents had an equal chance of being selected from the target population under study, to generate a sample (Addo, 2012; Anaman & Ghartey 2015; Dzisi & Obeng, 2013). The benefit associated with the adoption of the simple random sampling strategy was that it helped to minimize possible human bias in the sampling process.

#### **Research Instrument**

Structured questionnaire was used as the main research instrument for the study. Primary data was collected by using questionnaire as an appropriate research instrument for this study because it makes data collection from the larger target population size of Ghana's informal sector easier to obtain (Eliasu, Al-Hassan, Gasu, & Zakari, 2014). This was based on similar research that employed questionnaire as instrument in assessing the impact of microfinance (Abiola, 2011; Aliyu, 2013; Bichanga & Njage, 2014; Eliasu et al, 2014; Frimpong & Kalbersonn, 2014; Ondoro & Omena, 2012). The questionnaire contained 22 items with 5 items under the demographic characteristics, 17 items under other sections. Answers to the 22 items were rated on a Likert scale point ranging from strongly agree, agree, neutral, disagree and strongly disagree. The pilot study assessed 22 questions within the questionnaire and discovered Cronbach alpha of 0.924, which was above 0.7 alpha. Thus, the study ensured that the scale used in the research instrument was reliable since Cronbach alpha was greater than 0.7 (Skevakis, 2010). The relevant demographic data of the participants were collected, which constituted gender, age, educational background, working experience, and occupation (See Appendix II).

#### **Ethical Consideration**

The study adhered to APA's ethical principles of psychologists and code of conduct. According to APA (2002), "the general ethical principles and code of conduct of a scientific work includes beneficence and normal efficiency, fidelity and responsibility, integrity, justice and, respect for people's rights and dignity" (p.3-4). The following rights of the participants were strictly considered:

- Participants had adequate time to make decisions without any pressure from the researcher.
- Participants had the right of being informed of possible risks and benefits associated with the study.
- Participants had the right to ask questions in relation to the study.
- Participants had the right to stop participating in the study at any time.
- Participants had the right to receive a signed copy of consent form (Coleman, 2005).

#### **Explanation of variables and parameter estimation**

The component of the construct 'microfinance' that formed the independent variables were loans, savings, financial training, and micro insurance whilst the dependent variables comprised of business revenue (Aliyu, 2013; Bichanga & Njage, 2014; Ondoro & Omena, 2012). Microcredit refers to the lending aspect of microfinance which entails giving small loans to poor people without requesting collateral security (Rallens & Ghazanfar, 2005). Micro savings is defined as savings made in small amount by poor or low-income people through microfinance scheme (Babajide et al., 2015). Micro training is defined as the mechanism to support

informal learning aim at increasing learning capacity at the workplace (Vries & Brall, 2008). Micro insurance refers to the mechanism of protecting low-income or poor people against specific perils through payment of low premiums (Churchill, 2006).

#### **Data analysis and statistical tools**

The analysis for this study was parametric statistical analyses. The data was analyzed by using Statistical Package for Social Sciences (SPSS) software which is embedded with descriptive analysis, Correlation analysis functions, and regression functions. Thus, the study used statistical tools which included descriptive statistics, bivariate Pearson Correlation analysis, and multiple regression.

#### **4. Analysis and Discussion of Findings**

This section present findings of data analysis based on the procedures explained in the methodology. It comprises of summary results organized by the main research questions of the study. A total response rate of 99.5% (n=398) was recorded and used for the analysis of this study.

##### **Microfinance and business revenue in the Informal Sector**

This section show descriptive results on microfinance and business revenue in Ghana's informal sector. Descriptive statistics like frequency, percentages, mean, mode, standard deviation, maximum and minimum values were used to analyze findings. The study presented in Table 1 summarized descriptive statistical results. The findings in Table 1 showed that the microfinance variables considered, comprised of savings, access to loans, training and insurance cover for businesses in the informal sector.

**Table 1**

**Descriptive statistics: Microfinance and business revenue**

Statements	N	Mean	Mode	Std. Deviation	Variance	Minimum	Maximum
I am able to secure extra capital for my business	398	1.00	5.00	4.05	5	1.03	1.07
The capital has help me to pay my business expenses	398	2.00	5.00	4.12	5	0.96	0.91
Am able to meet my daily business needs	398	2.00	5.00	4.03	4	0.57	0.32
My business expenses have now reduced	398	2.00	5.00	3.96	4	0.85	0.73
I am able to make more sales	398	2.00	5.00	4.36	5	0.96	0.92
I am able to make more revenue from my sales	398	1.00	5.00	3.96	4	0.92	0.84
I am able to save and invest revenue to earn higher returns	398	1.00	5.00	4.18	5	0.98	0.97
My business revenue has generally increase after receiving assistance through microfinance	398	1.00	5.00	3.70	4	0.75	0.56

N= Number of valid observations (Source: Field data,2016)

The results in Tables 1 above showed a mean statistic of 4.05, and mode 5. Moreover, Figure 1 show that a significantly 72.4% (28.4% + 44%) participants indicated they are able to secure extra capital for their businesses. This means that informal sector workers are able to secure extra capital through microfinance for business.

*Figure 1 here*

The results in Tables 1 showed a mean statistic 4.12, and mode 5. Additionally, Figure 2 reveals that a significant 81.4% (39.7% + 41.7%) participants indicated that the capital they obtained, had helped to pay business expenses. This explains that microfinance had helped informal sector workers to pay business expenses.

*Figure 2 here*

The results in Tables 1 showed a mean statistic 4.03, and mode 4. Furthermore, Figure 3 reveals that a significant 91.5% (76.9% + 14.6%) participants indicated that they were able to meet business needs through microfinance. This explains that informal sector workers utilized microfinance to meet business needs.

*Figure 3 here*

The results in Tables 1 showed a mean statistic 3.96, and mode 4. Also, Figure 4 shows that significantly 79.7% (54.3% + 25.4%) participants indicated that through microfinance services their business expenses had reduced. This explains that business expenses in the informal sector have reduced because of microfinance.

*Figure 4 here*

The results in Tables 1 showed a mean statistic 4.36, and mode 5. As well, Figure 5 shows that a

significantly 83% (21.4% + 61.6%) participants indicated that they were able to make more sales because of microfinance. This explains that informal sector workers make more sales because of microfinance.

*Figure 5 here*

Tables 1 showed a mean value 3.96, and mode 4. Also, Figure 6 shows that a significant 74.4% (44% + 30.4%) participants indicated that they made more revenue from their sales. This explains that through microfinance, informal sector workers make more revenue from sales.

*Figure 6 here*

Tables 1 also showed a mean statistic 4.18 and mode 5. Moreover, Figure 7 shows that a significant 72.1% (20.1% + 52%) participants indicated that through microfinance, they were able to save and invest revenue to earn higher returns. This explains that due to microfinance, informal sector workers are able to save and invest revenue to earn higher returns.

*Figure 7 here*

The results in Tables 1 showed a mean value 3.70, and mode 4. As well, Figure 8 shows that an aggregate majority of 79.7% (77.4% + 2.3%) participants indicated that through microfinance, the business revenue of the informal sector workers has generally increase.

*Figure 8 here*

### **Impact of Microfinance on Business Revenue in the informal sector**

This section show analysis of results on the bivariate Pearson correlation and Multiple Regression analysis conducted between microfinance and business revenue based on the responses from the respondents.

#### **Bivariate Pearson Correlation**

The bivariate Pearson correlation was conducted between the general increase in business revenue and microfinance variables which included savings, loan, training and insurance cover (Table 2 and Figure 9). The study discovered that the correlation between micro savings and general increase in business revenue was 0.612 at a computed P-value of 0.000. This provided enough evidence to conclude a strong positive linear correlation between micro savings and general increase in business revenue, because the computed  $p=0.000 < 0.01$  and,  $r=0.612$  was between  $\pm 0.60$  and  $\pm 0.79$  criteria for strong correlation. The correlation between microloan and general increase in business revenue was 0.358 at a computed P-value of 0.000. This denoted enough evidence to conclude a weak positive linear correlation between microloan and general increase in business revenue, since the computed  $p=0.000 < 0.01$  and,  $r=0.358$  was between  $\pm 0.20$  and  $\pm 0.39$  criteria for weak correlation.

**Table 2**

**Pearson correlation for microfinance and business revenue**

Microfinance variables	General Increase in Business revenue		
	N	Pearson Correlation	Sig. (2-tailed)
Micro saving	398	.612**	.000
Micro loan	398	.358**	.000
Micro Training	398	.486**	.000
Micro insurance	398	.694**	.000

*Note.* \*\* Correlation is significant at the 0.01 level (2-tailed) (Source: Field data,2016)

The correlation between training and a general increase in business revenue was 0.486 at a computed P-value of 0.000. This gave enough evidence to conclude a moderate positive linear correlation between training and a general increase in business revenue, as the computed  $p=0.000 < 0.01$  and,  $r=0.486$  was between  $\pm 0.40$  and  $\pm 0.59$  criteria for moderate correlation. The correlation between insurance cover and a general increase in business revenue was 0.694 at a computed P-value of 0.000. This provided enough evidence to conclude a strong positive linear correlation between insurance cover and a general increase in business revenue, as the computed  $p=0.000 < 0.01$  and,  $r=0.694$  was between  $\pm 0.60$  and  $\pm 0.79$  criteria for strong correlation.

*Figure 9 here*

The inferences in Table 2 and the scatter plots in Figure 9 shows a significant positive linear relationship between microfinance variables (savings, loans, training and insurance) and a general increase in business revenue.

#### **Multiple Regression Analysis**

This section seeks to establish the significant statistical impact of microfinance on business revenue from the Multiple Regression Model: Business revenue = (1.522) + (0.080015) \* savings + (-0.03714) \* loans + (0.108185) \* training + (0.397228) \* insurance. The regression results show the following statistics as shown in table 3-5.

**Table 3**

*Model Summary<sup>b</sup>*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.698 <sup>a</sup>	.488	.483	.53763	1.234

a. Predictors: (Constant), Insurance Cover, Loan, Saving, Training.

b. Dependent Variable: Business revenue

(Source: Field data,2016)

Table 4.5 measures the proportion of the variation in the dependent variable (business revenue) that was explained by variations in the independent variables (savings, loan, training and insurance cover). The adjusted R-Square value of 0.483 from the regression model indicates that the independent variables explain 48.3% of business revenue in the informal sector. This shows that other latent variables also explain changes in business revenue in the informal sector.

**Table 4**

*ANOVA<sup>b</sup>*

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	108.223	4	27.056	93.603	.000 <sup>a</sup>
	Residual	113.596	393	.289		
	Total	221.819	397			

(Source: Field data,2016)

**Table 5**

*Coefficients<sup>a</sup>*

Predictor Term	Coefficient	SE Coefficient	T	P	VIF	Tolerance
<b>Constant</b>	1.522	0.214074	7.111	<b>0.0000</b>		
<b>Micro Savings</b>	0.080015	0.064684046	1.237	0.2168	1.863	0.536798
<b>Micro Loans</b>	-0.03714	0.053419977	-0.695	0.4873	2.122	0.471184
<b>Micro Training</b>	0.108185	0.062582978	1.729	0.0847	2.518	0.397113
<b>Micro Insurance</b>	0.397228	0.03518492	11.290	<b>0.0000</b>	2.241	0.446273

a. Dependent Variable: Business revenue

(Source: Field data,2016)

**Micro savings** the result in table 5 shows regression coefficient of 0.080015, standard error of 0.064684046, t stat 1.237, and P-value 0.2168. This indicate that micro savings showed a positive but statistically insignificant relationship with business revenue in the informal sector at significance level  $\alpha = 0.05$  as  $p=0.2168$  is greater than 0.05. Therefore, it can be concluded that there is insignificant relationship between micro savings and business revenue in the informal sector.

**Micro Loans** the result in table 5 shows regression coefficient of -0.03714, standard error of 0.053419977, t stat -0.695, and P-value 0.4873. This explains that micro loans showed a negative but statistically insignificant relationship with business revenue in the informal sector at significance level  $\alpha = 0.05$  as  $p=0.4873$  is greater than 0.05. Thus, it can be concluded that there is insignificant relationship between micro loans and business revenue in the informal sector.

**Micro Training** the result in table 5 shows regression coefficient of 0.108185, standard error of 0.062582978, t stat 1.729, and P-value 0.0847. This explains that micro training showed a positive but statistically insignificant relationship with business revenue in the informal sector at significance level  $\alpha = 0.05$  as  $p=0.0847$  is greater than 0.05. Hence, it can be concluded that there is insignificant relationship between micro training and business revenue in the informal sector.

**Micro Insurance** the result in table 5 shows regression coefficient of 0.397228, standard error of 0.03518492, t stat 11.290, and P-value 0.0000. This explains that exchange rate showed a positive but statistically significant relationship with business revenue in the informal sector at significance level  $\alpha = 0.05$  as  $p=0.0847$  is less than 0.05. Thus, it can be concluded that there is a very significant relationship between micro insurance and business revenue in the informal sector.

**Impact of the combination of microfinance variables (savings, loans, training and insurance) on business revenue** Table 4 shows the findings on the analysis of variance (ANOVA) on the combination of micro savings, micro loans, micro training and micro insurance on business revenue in the informal sector. Given a regression Sum of Square (SS) 108.223, residual Sum of Square (SS) 113.596, regression mean of square error 27.056,



residual mean of square error .289, the significance F has an associated P-Value .000. This established that the combination of micro savings, micro loans, micro training and micro insurance (microfinance variables) have a statistically significant impact on business revenue in the informal sector of Ghana, since the significance F (P-value=.000) is less than 0.05. Therefore, we reject the null hypothesis and accept the alternative hypothesis that microfinance have a statistically significant impact on business revenue in the informal sector of Ghana. Nevertheless, the individual variable analysis shows that apart from microinsurance, all the independent variables does not contribute significantly to changes in business revenue in the informal sector.

The research question was whether there is a relationship between microfinance and business revenue in Ghana's informal sector. The results were interesting as the Pearson correlation analysis and scatter plot (see Table 2 and Figure 9) showed significant positive linear relationship between microfinance sub variables (savings, loans, training and insurance) and business revenue. Additionally, the regression analysis established that the combination of savings, loans, training and insurance (microfinance variables) have a statistically significant impact on business revenue in the informal sector of Ghana, since the significance F (P-value) revealed 0.000 which is less than 0.05. The results support Asmamaw (2014) finding that the clients of Amhara Credit and Savings Institution reported an increased income. Also, Murray (2005) established a statistically significant positive relationship between microfinance and income generation of women beneficiaries. In contrast to studies on the relationship between loan as the core microfinance product and revenue generation (Ediomomo-Ubong and Iboru, 2010), the evidence from the finding of this study showed the benefits of other microfinance services like savings, training, and especially insurance in generating revenue. The study discovered that micro insurance has the highest positive correlation ( $r=0.694$ ) with business revenue as compared to savings ( $r=0.612$ ), loans ( $r=0.358$ ), and training ( $r=0.486$ ) as forms of microfinance. Additionally, including micro insurance into microfinance portfolio have a strong tendency of improving business revenue in the informal sector.

## 5. Conclusion

The study established that microfinance is the best strategy of making financial services available to people within the informal sector of Ghana. This study established that microfinance has a significant impact on business revenue. Insurance cover was discovered to be having the highest positive correlation as well as impact on business revenue. This is due to the current frequent incidence of market fires, flooding, environmental degradation due to rising 'galamsey' activities and decongestion exercises in Ghana. These eventualities are causing people within the informal sector to lose their shops, stocks, farms, business properties and huge revenues. On the other hand, people within the informal sector are gradually realizing capital appreciating from the interest earned on savings in microfinance institutions. Moreover, the microfinance institutions have incorporated the Susu system where microfinance staffs reach out to the informal sector workers at their workplaces to collect small monies which grow up to be big in the future.

The study recommends that microfinance institutions must focus on integrating insurance packages with core products like loans and business training to the informal sector workers. The insurance packages in the form of micro insurance where small amount of monies can be paid as premium at regular time intervals are appropriate to enable the poor informal sector workers to buy an insurance policy cover. Thus, microfinance institutions must use their distribution networks and clientele base to collaborate with insurance companies in Ghana to pioneer insurance products to the informal sector.

Microfinance institutions concentrate much in giving out loans to the informal sector workers. However, these loans have been discovered in this study as not significant enough to create jobs and encourage loan beneficiaries to save. The study recommends that microfinance institutions must improve upon loan size and the time of giving out loans to suit the peculiar needs of clients. Moreover, before loans are giving out, clients must be properly advised and keenly monitored after giving out the loan, to ensure that loans are used for the intended purpose. The prudent loan management practice of advisory and monitoring loan beneficiaries will bring a multiplier effect on business revenue and boost savings culture.

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#### Appendix I – Figures

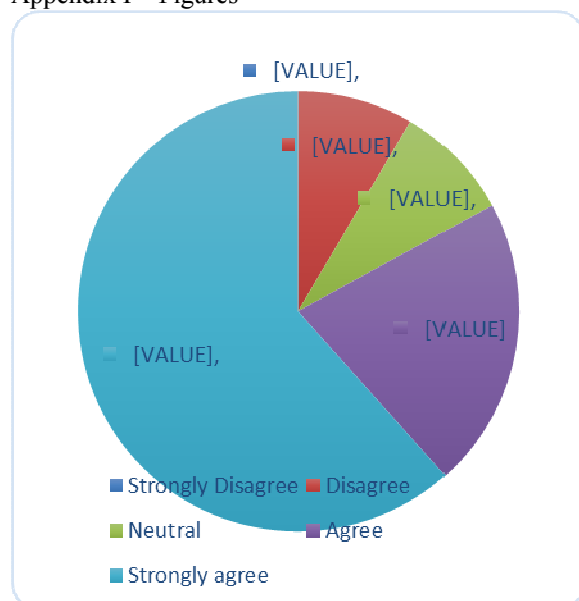


Figure 1 Extra capital for my business

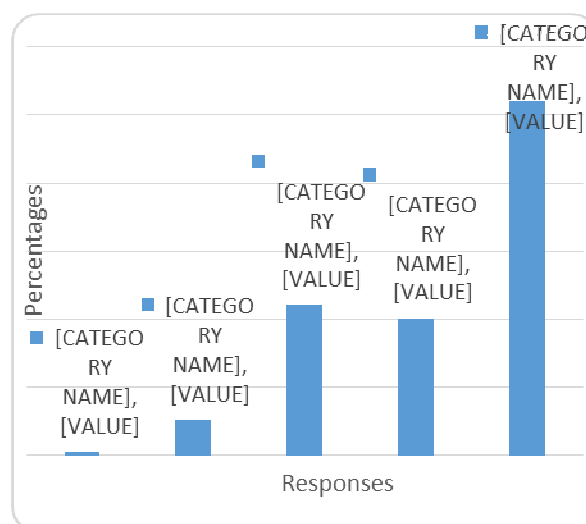


Figure 2 The capital has helped to pay business expenses

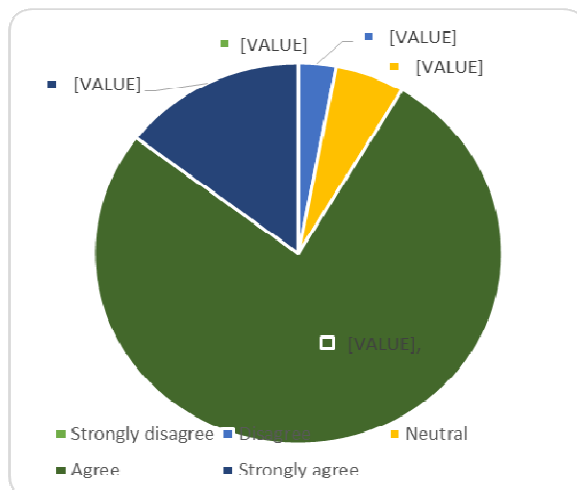


Figure 3 Meet daily business needs

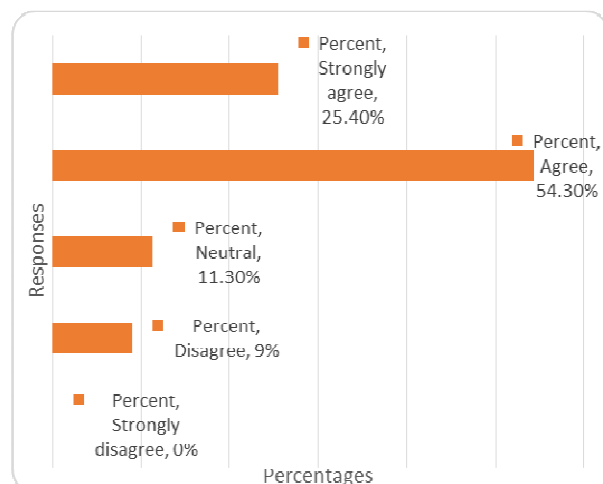


Figure 4 Business expenses have now reduced

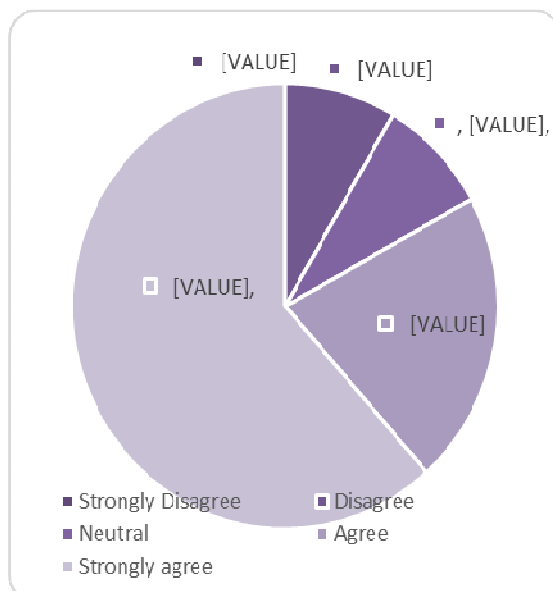


Figure 5 Able to make more sales

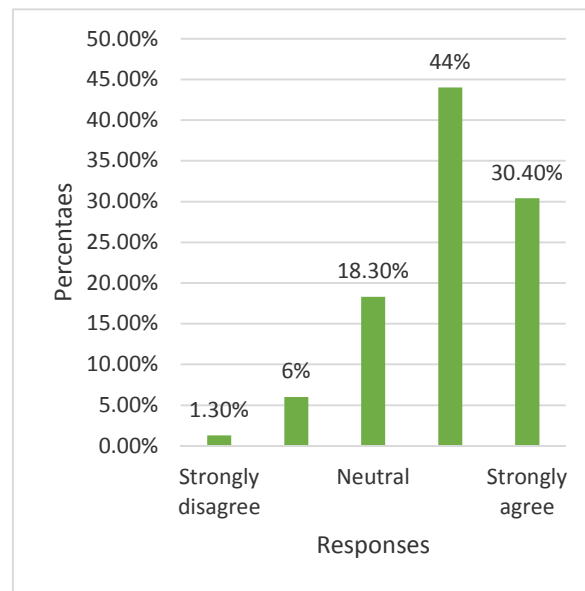


Figure 6 Make more revenue from sales

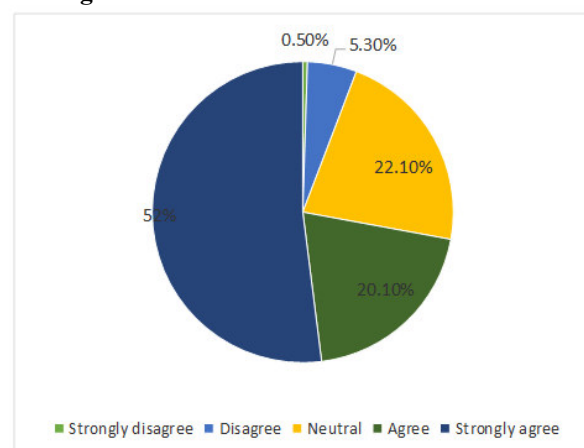


Figure 7 Able to save and invest

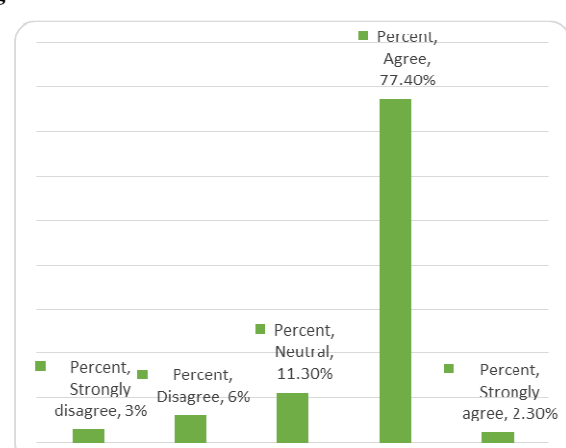


Figure 8 General increase in business revenue



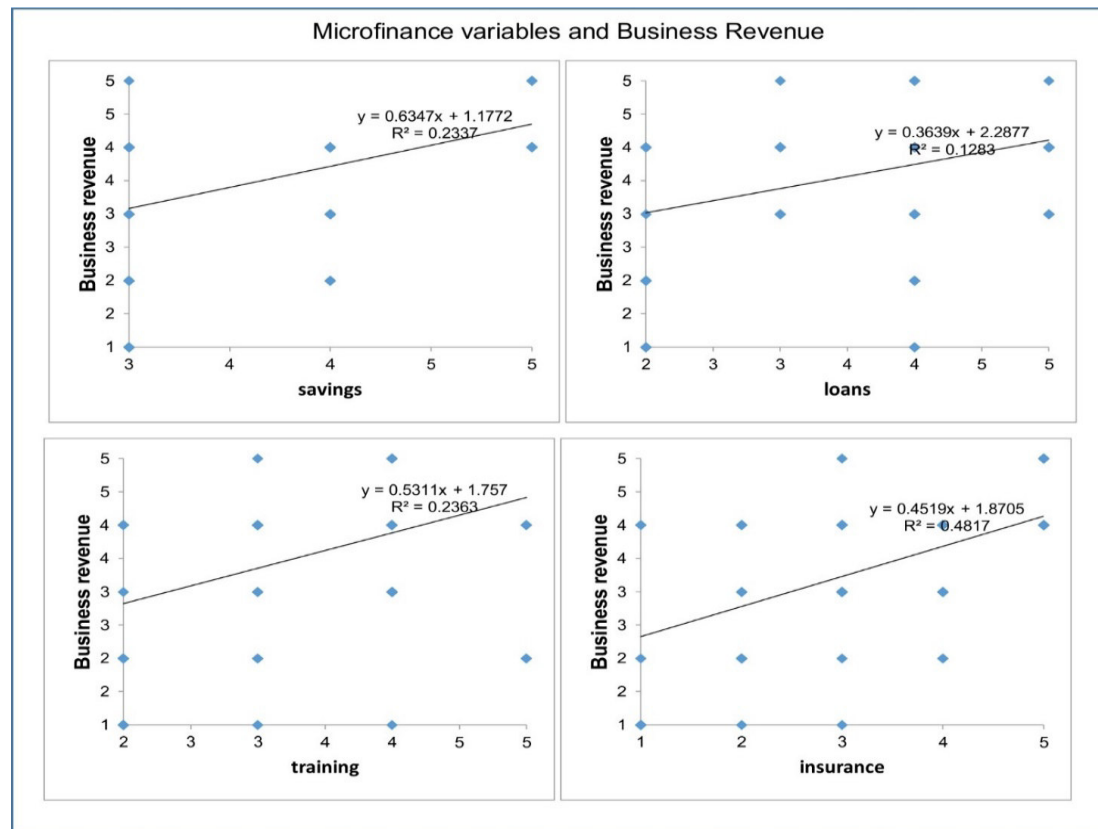


Figure 9 Scatter plot on Microfinance and Business Revenue

## Appendix II – Demographic Data

### Demographic Data

	Characteristics	# of Participants	%
Gender	Male	218	54.80%
	Female	180	45.23%
	Total	398	100.00%
Age of Participants	18-24years	34	8.54%
	25-34years	189	47.49%
	35-44 years	114	28.64%
	above 44 years	61	15.33%
	Total	398	100.00%
Educational Background	Senior level	202	50.75%
	Diploma	121	30.40%
	Degree	13	3.27%
	Others	62	15.58%
	Total	398	100.00%
Working Experience	Less than 2years	26	6.53%
	2-4years	144	36.18%
	10 years and above	28	7.04%
	Total	398	100.00%
Occupation	Trader	215	54.00%
	Manufacturer/Producer	122	8.50%
	Service Provider	27	6.80%
	Artisan	34	30.70%
	Total	398	100.00%

(Source: Field data,2016)